# Miniature Pumps in the Cone Penetrometer Tip for Groundwater and Soil Sampling (Cone Sipper)

(OST/TMS ID: 381/ TMS Application ID: 1730)

The Cone Sipper is a groundwater and soil vapor sampling device designed to be used with a cone penetrometer truck (CPT). The probe is advanced into the subsurface with the CPT and can be used to collect samples at multiple depths in a single borehole. Samples are brought to the surface via small-diameter plastic tubes and the device can be purged for reuse in situ by injecting distilled water, air, or inert gas. The main advantage of the Cone Sipper over other groundwater samplers is that it eliminates the need for retrieval and decontamination of the sampler between sampling intervals. Its simple construction using just three remote-controlled valves ensures reliable operation.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Kennedy Space Center, Cape Canaveral Air Station, Hanger K (Cape Canaveral, FL, United States)

**PBS Name**: Not Specified

**Date of Deployment**: December 1998

**Technology User**: Westinghouse Savannah River Company

**Deployment Value/Impact**: The Cone Sipper allowed water and gas samples to be obtained from subsurface locations using only a cone penetrometer for deployment. This technology eliminates the need and expense of drilling monitoring wells to obtain subsurface water and gas samples. Thus, subsurface contamination can be located and traced in a shorter period of time and at a lower cost with respect to baseline technology. DNAPL was not identified at the site; this data was used to supplement existing dissolved plume characterization data by CCAS site managers.

**Vendor Name for this Technology:** Cone Sipper

**Point of Contact**:

**User Program POC(s)**:
Jacqueline Quinn (NASA Environmental Program Office) - Cape Canaveral, FL. Tel. 407-867-4265

**OST Program POC(s)**:
John B. Jones (DOE-NV) - Las Vegas, NV. Tel. 702-295-0532

**Technology User POC(s)**:
Carol A. Eddy-Dilek (Westinghouse Savannah River Company) - Aiken, SC. Tel. 513-529-3218

**Vendor Company POC(s)**:
Jim Shinn (Applied Research Associates/Vertek) - South Royalton, VT. Tel. 802-763-8348

**Major Developers**:
- Applied Research Associates, Inc.
- Savannah River Technology Center

**Vendor Company**:
Applied Research Associates (www.ara.com)

**Other Deployments**:
Deployed (type: DOE) in FY 1996 at Savannah River Site (Metallurgical Manufacturing Facility in Area M) in Aiken, SC

# Colloidal Borescope

(OST/TMS ID: 465/ TMS Application ID: 1302)

This is an innovative technology used to determine ground-water flow and direction through observation of the movement of colloidal particles suspended in water. Current applications include: site characterization by determining preferential flow paths and fractures; assessing heterogeneities associated with porous media; establishing the existence of immiscible contaminant layers and their associated flow properties; assessing the efficiency of ground-water remediation programs by determining the effective radius of influence of ground-water extraction systems; and evaluating the effects of sampling on colloidal concentrations. Potential applications include providing physical observation capabilities necessary to develop and confirm new, more accurate theoretical models of porous media flow process, and assessing the effect of water sampling techniques on natural colloidal concentrations.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), Y-12 Reactive Barrier Trench S-3 Ponds (Oak Ridge, TN, United States)

**PBS Name**: Y-12 Bear Creek Remedial Action [OR-42102, 0307]

**Date of Deployment**: December 1998 **Technology User**: DOE-OR

**Deployment Value/Impact**: The borescope is an instrument capable of directly observing the movement of colloidal size particles within boreholes to quantify groundwater flow rate and direction. This will save on the number of aquifer tests and monitoring wells installed at a site.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Johnny O. Moore (DOE OR) - Oak Ridge, TN. Tel. 423-576-3536

**OST Program POC(s)**:
Elizabeth Phillips (DOE-OR) - Oak Ridge, TN. Tel. 423-241-6172

**Technology User POC(s)**:
Nic Korte (Oak Ridge National Laboratory/Grand Junction Office) - Grand Junction, CO. Tel. 970-248-6210

**Vendor Company POC(s)**:
Peter M. Kearl (Aqua Vision) - Grand Junction, CO. Tel. 970-243-7308

**Major Developers**:
Oak Ridge National Laboratory, Chemical Technology Division

**Vendor Company**:
Aqua Vision

**Other Deployments**:

- Deployed (type: DOE) in FY 1994 at Lawrence Livermore National Laboratory (Main Site, Site 300) in Livermore, CA
- Deployed (type: DOE) in FY 1992 at Oak Ridge (Paducah, Portsmouth)
- Deployed (type: DOE) in FY 1994 at FEMP in OH
- Deployed (type: DOE) in FY 1998 at Lawrence Livermore National Lab (LLNL Site 300) in Livermore, CA
- Deployed (type: DOE) in FY 1999 at Kansas City Plant (Reactive Barrier hydraulic monitoring) in Kansas City, MO
- Deployed (type: Non-DOE) in FY 1999 at North Island Naval Base (Deployment Site #10) in CA
- Deployed (type: Non-DOE) in FY 1999 at North Island Naval Base (Deployment Site #1 CDF) in CA
- Deployed (type: Non-DOE) in FY 1999 at North Island Naval Base (Deployment Site #9) in CA

# Colloidal Borescope

(OST/TMS ID: 465/ TMS Application ID: 1365)

This is an innovative technology used to determine ground-water flow and direction through observation of the movement of colloidal particles suspended in water. Current applications include: site characterization by determining preferential flow paths and fractures; assessing heterogeneities associated with porous media; establishing the existence of immiscible contaminant layers and their associated flow properties; assessing the efficiency of ground-water remediation programs by determining the effective radius of influence of ground-water extraction systems; and evaluating the effects of sampling on colloidal concentrations. Potential applications include providing physical observation capabilities necessary to develop and confirm new, more accurate theoretical models of porous media flow process, and assessing the effect of water sampling techniques on natural colloidal concentrations.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Kansas City Plant, Reactive Barrier hydraulic monitoring (Kansas City, MO, United States)

**PBS Name**: Kansas City Environmental Restoration Project [AL007, 0466]

**Date of Deployment**: June 1999 **Technology User**: Kansas City Plant

**Deployment Value/Impact**: The benefits of using this technology are as follows: Micropurge sampling is faster and eliminates the expense of disposing of purge water; 2) to evaluate directly flow direction in order to demonstrate the effects of buried utilities on groundwater flow; 3) to demonstrate colloid density to regulators concerned about colloidal transport; and 4) to evaluate the homogeneity of their iron barrier. At wells where this technology is applied, cost savings are being realized from reduced sampling times, reduction or elimination of purge water (managed as hazardous waste), and direct determination of groundwater flow directions. The magnitude of savings depends on the characteristics of the well being sampled. It is also an enabling technology for assessment of colloidal transport potential and evaluating the homogeneity of iron reactive barriers.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Joe Baker (Kansas City Plan) - Kansas City, MO. Tel. 816-997-7332

**OST Program POC(s)**:
James A. Wright (SCFA) - Aiken, SC. Tel. 803-725-5608

**Technology User POC(s)**:
Nic Korte (Oak Ridge National Laboratory/Grand Junction Office) - Grand Junction, CO. Tel. 970-248-6210

**Vendor Company POC(s)**:
Peter M. Kearl (Aqua Vision) - Grand Junction, CO. Tel. 970-243-7308

**Major Developers**:
Oak Ridge National Laboratory, Chemical Technology Division

**Vendor Company**:
Aqua Vision

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (Y-12 Reactive Barrier Trench S-3 Ponds) in Oak Ridge, TN
- Deployed (type: Non-DOE) in FY 1999 at North Island Naval Base (Deployment Site #10) in CA
- Deployed (type: Non-DOE) in FY 1999 at North Island Naval Base (Deployment Site #1 CDF) in CA
- Deployed (type: Non-DOE) in FY 1999 at North Island Naval Base (Deployment Site #9) in CA
- Deployed (type: DOE) in FY 1998 at Lawrence Livermore National Lab (LLNL Site 300) in Livermore, CA
- Deployed (type: DOE) in FY 1994 at Lawrence Livermore National Laboratory (Main Site, Site 300) in Livermore, CA
- Deployed (type: DOE) in FY 1994 at FEMP in OH
- Deployed (type: DOE) in FY 1992 at Oak Ridge (Paducah, Portsmouth)

# Colloidal Borescope

(OST/TMS ID: 465/ TMS Application ID: 1718)

This is an innovative technology used to determine ground-water flow and direction through observation of the movement of colloidal particles suspended in water. Current applications include: site characterization by determining preferential flow paths and fractures; assessing heterogeneities associated with porous media; establishing the existence of immiscible contaminant layers and their associated flow properties; assessing the efficiency of ground-water remediation programs by determining the effective radius of influence of ground-water extraction systems; and evaluating the effects of sampling on colloidal concentrations. Potential applications include providing physical observation capabilities necessary to develop and confirm new, more accurate theoretical models of porous media flow process, and assessing the effect of water sampling techniques on natural colloidal concentrations.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: North Island Naval Base, Deployment Site #10 (CA, United States)

**PBS Name**: Not Specified

**Date of Deployment**: July 1999 **Technology User**: U.S. Navy

**Deployment Value/Impact**: Allows more accurate real-time ground water flow data on velocity and speed than traditional pump tests.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Mark Bonsavage (U.S. Navy, SW Div.) - TN. Tel. 619-556-7315

**OST Program POC(s)**:
Elizabeth Phillips (DOE-OR) - Oak Ridge, TN. Tel. 423-241-6172

**Technology User POC(s)**:
Nic Korte (Oak Ridge National Laboratory/Grand Junction Office) - Grand Junction, CO. Tel. 970-248-6210

**Vendor Company POC(s)**:
Bruce Roemer (Aqua Vision) - Grand Junction, CO. Tel. 970-434-6199

**Major Developers**:
Oak Ridge National Laboratory, Chemical Technology Division

**Vendor Company**:
Aqua Vision

**Other Deployments**:

- Deployed (type: DOE) in FY 1994 at Lawrence Livermore National Laboratory (Main Site, Site 300) in Livermore, CA
- Deployed (type: DOE) in FY 1992 at Oak Ridge (Paducah, Portsmouth)
- Deployed (type: DOE) in FY 1994 at FEMP in OH
- Deployed (type: DOE) in FY 1998 at Lawrence Livermore National Lab (LLNL Site 300) in Livermore, CA
- Deployed (type: DOE) in FY 1999 at Kansas City Plant (Reactive Barrier hydraulic monitoring) in Kansas City, MO
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (Y-12 Reactive Barrier Trench S-3 Ponds) in Oak Ridge, TN
- Deployed (type: Non-DOE) in FY 1999 at North Island Naval Base (Deployment Site #1 CDF) in CA
- Deployed (type: Non-DOE) in FY 1999 at North Island Naval Base (Deployment Site #9) in CA

# Colloidal Borescope

(OST/TMS ID: 465/ TMS Application ID: 1719)

This is an innovative technology used to determine ground-water flow and direction through observation of the movement of colloidal particles suspended in water. Current applications include: site characterization by determining preferential flow paths and fractures; assessing heterogeneities associated with porous media; establishing the existence of immiscible contaminant layers and their associated flow properties; assessing the efficiency of ground-water remediation programs by determining the effective radius of influence of ground-water extraction systems; and evaluating the effects of sampling on colloidal concentrations. Potential applications include providing physical observation capabilities necessary to develop and confirm new, more accurate theoretical models of porous media flow process, and assessing the effect of water sampling techniques on natural colloidal concentrations.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: North Island Naval Base, Deployment Site #1 CDF (CA, United States)

**PBS Name**: Not Specified

**Date of Deployment**: July 1999 **Technology User**: U.S. Navy

**Deployment Value/Impact**: Allows more accurate real-time ground water flow data on velocity and speed than traditional pump tests.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Mark Bonsavage (U.S. Navy, SW Div.) - TN. Tel. 619-556-7315

**OST Program POC(s)**:
Elizabeth Phillips (DOE-OR) - Oak Ridge, TN. Tel. 423-241-6172

**Technology User POC(s)**:
Nic Korte (Oak Ridge National Laboratory/Grand Junction Office) - Grand Junction, CO. Tel. 970-248-6210

**Vendor Company POC(s)**:
Bruce Roemer (Aqua Vision) - Grand Junction, CO. Tel. 970-434-6199

**Major Developers**:
Oak Ridge National Laboratory, Chemical Technology Division

**Vendor Company**:
AquaVision

**Other Deployments**:

- Deployed (type: DOE) in FY 1994 at Lawrence Livermore National Laboratory (Main Site, Site 300) in Livermore, CA
- Deployed (type: DOE) in FY 1992 at Oak Ridge (Paducah, Portsmouth)
- Deployed (type: DOE) in FY 1994 at FEMP in OH
- Deployed (type: DOE) in FY 1998 at Lawrence Livermore National Lab (LLNL Site 300) in Livermore, CA
- Deployed (type: DOE) in FY 1999 at Kansas City Plant (Reactive Barrier hydraulic monitoring) in Kansas City, MO
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (Y-12 Reactive Barrier Trench S-3 Ponds) in Oak Ridge, TN
- Deployed (type: Non-DOE) in FY 1999 at North Island Naval Base (Deployment Site #10) in CA
- Deployed (type: Non-DOE) in FY 1999 at North Island Naval Base (Deployment Site #9) in CA

# Colloidal Borescope

(OST/TMS ID: 465/ TMS Application ID: 1720)

This is an innovative technology used to determine ground-water flow and direction through observation of the movement of colloidal particles suspended in water. Current applications include: site characterization by determining preferential flow paths and fractures; assessing heterogeneities associated with porous media; establishing the existence of immiscible contaminant layers and their associated flow properties; assessing the efficiency of ground-water remediation programs by determining the effective radius of influence of ground-water extraction systems; and evaluating the effects of sampling on colloidal concentrations. Potential applications include providing physical observation capabilities necessary to develop and confirm new, more accurate theoretical models of porous media flow process, and assessing the effect of water sampling techniques on natural colloidal concentrations.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: North Island Naval Base, Deployment Site #9 (CA, United States)

**PBS Name**: Not Specified

**Date of Deployment**: June 1999 **Technology User**: U.S. Navy

**Deployment Value/Impact**: Allows more accurate real-time ground water flow data on velocity and speed than traditional pump tests.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Mark Bonsavage (U.S. Navy, SW Div.) - TN. Tel. 619-556-7315

**OST Program POC(s)**:
Elizabeth Phillips (DOE-OR) - Oak Ridge, TN. Tel. 423-241-6172

**Technology User POC(s)**:
Nic Korte (Oak Ridge National Laboratory/Grand Junction Office) - Grand Junction, CO. Tel. 970-248-6210

**Vendor Company POC(s)**:
Bruce Roemer (Aqua Vision) - Grand Junction, CO. Tel. 970-434-6199

**Major Developers**:
Oak Ridge National Laboratory, Chemical Technology Division

**Vendor Company**:
AquaVision

**Other Deployments**:

- Deployed (type: DOE) in FY 1994 at Lawrence Livermore National Laboratory (Main Site, Site 300) in Livermore, CA
- Deployed (type: DOE) in FY 1992 at Oak Ridge (Paducah, Portsmouth)
- Deployed (type: DOE) in FY 1994 at FEMP in OH
- Deployed (type: DOE) in FY 1998 at Lawrence Livermore National Lab (LLNL Site 300) in Livermore, CA
- Deployed (type: DOE) in FY 1999 at Kansas City Plant (Reactive Barrier hydraulic monitoring) in Kansas City, MO
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (Y-12 Reactive Barrier Trench S-3 Ponds) in Oak Ridge, TN
- Deployed (type: Non-DOE) in FY 1999 at North Island Naval Base (Deployment Site #10) in CA
- Deployed (type: Non-DOE) in FY 1999 at North Island Naval Base (Deployment Site #1 CDF) in CA

# LDUA Supervisory Data Acquisition and Supervisory Control System

(OST/TMS ID: 810/ TMS Application ID: 1734)

The Light Duty Utility Arm Supervisory Data Acquisition and Supervisory Control System provides integrated data acquisition and remote control capability for Light Duty Utility Arm operations. Applications include Light Duty Utility Arm deployment operations at the Oak Ridge Reservation, Hanford Site, and the Idaho National Engineering and Environmental Laboratory.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), GAAT tank W-7 (Oak Ridge, TN, United States)

**PBS Name**: ORNL Remedial Action - Def [OR-321, 0095] ORNL Remedial Action - Non-Def [OR-322, 0096]

**Date of Deployment**: November 1998

**Technology User**: Lockheed Martin Energy Research under contract to M&I Bechtel Jacobs Company

**Deployment Value/Impact**: The Light Duty Utility Arm Supervisory Data Acquisition and Supervisory Control System was successful at providing integrated data acquisition and remote control capability for Light Duty Utility Arm operations in GAAT Tank W-7.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Jacquie R. Noble-Dial (DOE-Oak Ridge) - Oak Ridge, TN. Tel. 423-241-6184

**OST Program POC(s)**:
Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509-372-4546

**Technology User POC(s)**:
Sharon M. Robinson (Lockheed Martin Energy Research) - Oak Ridge, TN. Tel. 423-574-6779

**Vendor Company POC(s)**:
No Points of Contact are listed.

**Major Developers**:
No Major Developers are listed.

**Vendor Company**:
Vendor Not Applicable

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (GAAT tank W-10) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1997 at Oak Ridge (ORNL Gunite Tanks W-3) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1996 at Hanford (Tank 241-T-106) in Richland, WA

# LDUA Supervisory Data Acquisition and Supervisory Control System

(OST/TMS ID: 810/ TMS Application ID: 1735)

The Light Duty Utility Arm Supervisory Data Acquisition and Supervisory Control System provides integrated data acquisition and remote control capability for Light Duty Utility Arm operations. Applications include Light Duty Utility Arm deployment operations at the Oak Ridge Reservation, Hanford Site, and the Idaho National Engineering and Environmental Laboratory.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), GAAT tank W-10 (Oak Ridge, TN, United States)

**PBS Name**: ORNL Remedial Action - Def [OR-321, 0095] ORNL Remedial Action - Non-Def [OR-322, 0096]

**Date of Deployment**: March 1999

**Technology User**: Lockheed Martin Energy Research under contract to M&I Bechtel Jacobs Company

**Deployment Value/Impact**: The Light Duty Utility Arm Supervisory Data Acquisition and Supervisory Control System has successfully provided integrated data acquisition and remote control capability for Light Duty Utility Arm operations in GAAT Tank W-10.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Jacquie R. Noble-Dial (DOE-Oak Ridge) - Oak Ridge, TN. Tel. 423-241-6184

**OST Program POC(s)**:
Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509-372-4546

**Technology User POC(s)**:
Sharon M. Robinson (Lockheed Martin Energy Research) - Oak Ridge, TN. Tel. 423-574-6779

**Vendor Company POC(s)**:
No Points of Contact are listed.

**Major Developers**:
No Major Developers are listed.

**Vendor Company**:
Vendor Not Applicable

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (GAAT tank W-7) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1997 at Oak Ridge (ORNL Gunite Tanks W-3) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1996 at Hanford (Tank 241-T-106) in Richland, WA

# Confined Sluicing End Effector

(OST/TMS ID: 812/ TMS Application ID: 1253)

The Confined Sluicing End Effector is a retrieval tool that can dislodge, mobilize, and convey radioactive sludge from Department of Energy's underground storage tanks at the Idaho National Engineering Laboratory, Oak Ridge Reservation, Hanford Site, and Savannah River Site. This end effector can also be used to clean the waste scale from the surface of the tank walls. The Confined Sluicing End Effector provides a retrieval method that minimizes water addition and maximizes retrieval efficiency by using variable pressure nozzles optimized for the specific waste type.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), GAAT W-7 (Oak Ridge, TN, United States)

**PBS Name**: ORNL Remedial Action - Def [OR-321, 0095] ORNL Remedial Action - Non-Def [OR-322, 0096]

**Date of Deployment**: January 1999

**Technology User**: Lockheed Martin Energy Research under contract to M&I Bechtel Jacobs Company

**Deployment Value/Impact**: Deployed by the modified Light Duty Utility Arm (TMS ID 85), the Gunite Scarifying End Effector (TMS ID 2384) and Confined Sluicing End Effectors were used to retrieve waste and clean sludge and residues from the walls of GAAT W-7.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Jacquie R. Noble-Dial (DOE-Oak Ridge) - Oak Ridge, TN. Tel. 423-241-6184

**OST Program POC(s)**:
Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509-372-4546

**Technology User POC(s)**:
Sharon M. Robinson (Lockheed Martin Energy Research) - Oak Ridge, TN. Tel. 423-574-6779

**Vendor Company POC(s)**:
No Points of Contact are listed.

**Major Developers**:
Pacific Northwest National Laboratory, Energy Technology Division

**Vendor Company**:
Vendor Not Applicable

**Other Deployments**:

- Deployed (type: DOE) in FY 1997 at ORNL (GAAT W-3) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1998 at Oak Ridge (GAAT Tank W-6) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1998 at Oak Ridge (GAAT, Tank W-4) in Oak Ridge, TN

# Field Raman Spectrograph

(OST/TMS ID: 873/ TMS Application ID: 1673)

The cone penetrometer is a heavy-weight truck with a hydraulic push system that is used for subsurface site characterization. In the standard configuration, the tip of the cone penetrometer rod is equipped with sensors that measure depth-discrete physical and geologic parameters of the subsurface. Detection instruments and sampling devices for water, gas, and soil have been modified and housed within the cone penetrometer rods to provide detailed contaminant information. The field-hardened Raman Spectrograph can be used to obtain ´chemical fingerprints´ of concentrated and dilute hazardous waste contaminants in storage tanks, soil, and water. It is a portable, small analytical device capable of in situ measurements that can identify compounds more than 50 meters away from the spectrometer via fiber optic probes.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Savannah River Site, 321-M Area (Aiken, SC, United States)

**PBS Name**: Upper Three Runs Project [SR-ER06, 0056]

**Date of Deployment**: November 1998

**Technology User**: Westinghouse Savannah River Company

**Deployment Value/Impact**: Deployed with the cone penetrometer at the 321M Area, Savannah River Site

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Les Germany (DOE-SR) - Aiken, SC. Tel. 803-725-8033

**Technology User POC(s)**:
Bob Blundy (WSRC-ER) - Aiken, SC. Tel. 803-952-6788

**OST Program POC(s)**:
Robert C. Bedick (National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4505

**Vendor Company POC(s)**:
Job Bello (EIC Laboratories, Inc.) - Norwood, MA. Tel. 781-769-9450

**Major Developers**:
EIC Laboratories

**Vendor Company**:
EIC Laboratories, Inc.

**Other Deployments**:
This is the first deployment of this technology.

# Stereo Viewing System

(OST/TMS ID: 890/ TMS Application ID: 416)

The Stereo Viewing System provides stereoscopic viewing of Light Duty Utility Arm activities. Stereoscopic viewing allows operators to see the depth of objects. This capability improves the control of the Light Duty Utility Arm performed in DOE's underground radioactive waste storage tanks and allows operators to evaluate the depth of pits, seams, and other anomalies. Potential applications include Light Duty Utility Arm deployment operations at the Oak Ridge Reservation, Hanford Site, and the Idaho National Engineering and Environmental Laboratory.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Idaho National Engineering and Environmental Laboratory, Tank WM-188 (Idaho Falls, ID, United States)

**PBS Name**: HLW Treatment and Storage [ID-HLW-103, 0565]

**Date of Deployment**: February 1999 **Technology User**: INEEL

**Deployment Value/Impact**: The Stereo Video Camera system was deployed for a preliminary visual inspection inside Tank WM-188 followed by deployment of a non-destructive examination (NDE) end effector (TMS ID 2359) for weld defect and corrosion inspection. These technologies were deployed using the Light-Duty Utility Arm (TMS ID 85). End-effectors were changed remotely minimizing personnel exposure to radiation and equipment contamination using the Remote End Effector Tool Plate (TMS ID 2394) and the Remote End Effector Exchange System (TMS ID 2393).

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Keith A. Lockie (DOE-ID) - Idaho Falls, ID. Tel. 208-526-0118

**OST Program POC(s)**:
Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509-372-4546

**Technology User POC(s)**:
Jim H. Valentine (Lockheed Martin Idaho Technologies Company) - Idaho Falls, ID. Tel. 208-526-3267

**Vendor Company POC(s)**:
No Points of Contact are listed.

**Major Developers**:
Savannah River Technology Center

**Vendor Company**:
Vendor Not Applicable

**Other Deployments**:
- Deployed (type: DOE) in FY 1997 at Hanford (Tank 241-T-106) in Richland, WA
- Deployed (type: DOE) in FY 1995 at Hanford (Tank TX-115) in Richland, WA

# Innovative Rotary Crossflow System for Volume Reduction of Mixed Hazardous and Rad Waste

(OST/TMS ID: 1449/ TMS Application ID: 1687)

This technology, developed by SpinTek Membrane Systems, will produce a compact, crossflow membrane system having high fluid shear to prevent fouling, induced turbulence to increase flux, and ceramic membranes.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Los Alamos National Laboratory (Los Alamos, NM, United States)

**PBS Name**: LANL Waste Management - Legacy Waste [AL013, 0472]

**Date of Deployment**: April 1999

**Technology User**: Los Alamos National Laboratory

**Deployment Value/Impact**: Deployed at LANL in April 1999. Reported as deployed by DOE-AL in Year-end QMR

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Pam Saxman (DOE-AL) - Albuquerque, NM. Tel. 505-845-6101

**Technology User POC(s)**:
No Points of Contact are listed.

**OST Program POC(s)**:
Robert C. Bedick (National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4505

**Vendor Company POC(s)**:
Richard Hayes (SpinTek Systems, Inc.) - Huntington Beach, CA. Tel. 714-848-3060

**Major Developers**:
Spin TEK Membrane Systems, Inc

**Vendor Company**:
SpinTek Membrane Systems, Inc.

**Other Deployments**:
This is the first deployment of this technology.

# AEA Fluidic Pulse Jet Mixer

(OST/TMS ID: 1511/ TMS Application ID: 1308)

AEA's Fluidic Pulse Jet Mixer was developed to mix and maintain the suspension of solids and to blend process liquids. The mixer can be used to combine a tank's available supernate with the sludge into a slurry that is suitable for pumping. The system uses jet nozzles in the tank coupled to a charge vessel. Then, a jet pump creates a partial vacuum in the charge vessel allowing it to be filled with waste. Next, air pressure is applied to the charge vessel, forcing sludge back into the tank and mixing it with the liquid waste. When the liquid waste contains 10% solids, a batch is pumped out of the tank.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), BVEST Tank C-1 (Oak Ridge, TN, United States)

**PBS Name**: ORNL Remedial Action - Def [OR-321, 0095] ORNL Remedial Action - Non-Def [OR-322, 0096]

**Date of Deployment**: February 1999 **Technology User**: Lockheed Martin

**Deployment Value/Impact**: The deployment safely transferred sludge and supernatant to secure storage and demonstrated the pulse jet mixing technique's applicability to DOE's underground storage tank remediation. The waste will be processed as part of the Melton Valley Storage Tanks-Transuranic (MVST-TRU) Waste Treatment and Disposal Project. The Pulse Jet Mixer retrieved 95.5% of 3,250 gallons of sludge and supernatant from Tank C-1.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Jacquie R. Noble-Dial (DOE-Oak Ridge) - Oak Ridge, TN. Tel. 423-241-6184

**OST Program POC(s)**:
Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509-372-4546

**Technology User POC(s)**:
Sharon M. Robinson (Lockheed Martin Energy Research) - Oak Ridge, TN. Tel. 423-574-6779

**Vendor Company POC(s)**:
Laurie Judd (AEA Technologies Consultancy Services, Inc.) - Vienna, VA. Tel. 703-433-0720

**Major Developers**:
- AEA Technology Inc.
- Oak Ridge National Laboratory, Robotics & Process Systems Division
- Pacific Northwest National Laboratory, Energy Technology Division

**Vendor Company**:
AEA Technology Inc.

**Other Deployments**:
- Deployed (type: DOE) in FY 1998 at Oak Ridge (Bethel Valley Evaporator Service Tank) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (BVEST Tank C-2) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1998 at Oak Ridge (BVEST W-22) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1998 at Oak Ridge (BVEST W-23) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1999 at Savannah River Site (SRS F Tank Pump 1) in Aiken, SC

# AEA Fluidic Pulse Jet Mixer

(OST/TMS ID: 1511/ TMS Application ID: 1309)

AEA's Fluidic Pulse Jet Mixer was developed to mix and maintain the suspension of solids and to blend process liquids. The mixer can be used to combine a tank's available supernate with the sludge into a slurry that is suitable for pumping. The system uses jet nozzles in the tank coupled to a charge vessel. Then, a jet pump creates a partial vacuum in the charge vessel allowing it to be filled with waste. Next, air pressure is applied to the charge vessel, forcing sludge back into the tank and mixing it with the liquid waste. When the liquid waste contains 10% solids, a batch is pumped out of the tank.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Oak Ridge Reservation (Y-12, ORR, K-25, ORNL), BVEST Tank C-2 (Oak Ridge, TN, United States)

**PBS Name**: ORNL Remedial Action - Def [OR-321, 0095] ORNL Remedial Action - Non-Def [OR-322, 0096]

**Date of Deployment**: February 1999 **Technology User**: Lockheed Martin

**Deployment Value/Impact**: The deployment safely transferred sludge and supernatant to secure storage and demonstrated the pulse jet mixing technique's applicability to DOE's underground storage tank remediation. The waste will be processed as part of the Melton Valley Storage Tanks-Transuranic (MVST-TRU) Waste Treatment and Disposal Project. The Pulse Jet Mixer retrieved 98.9% of 8,180 gallons of sludge and supernatant from Tank C-2.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Jacquie R. Noble-Dial (DOE-Oak Ridge) - Oak Ridge, TN. Tel. 423-241-6184

**OST Program POC(s)**:
Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509-372-4546

**Technology User POC(s)**:
Sharon M. Robinson (Lockheed Martin Energy Research) - Oak Ridge, TN. Tel. 423-574-6779

**Vendor Company POC(s)**:
Laurie Judd (AEA Technologies Consultancy Services, Inc.) - Vienna, VA. Tel. 703-433-0720

**Major Developers**:
- AEA Technology Inc.
- Oak Ridge National Laboratory, Robotics & Process Systems Division
- Pacific Northwest National Laboratory, Energy Technology Division

**Vendor Company**:
AEA Technology Inc.

**Other Deployments**:
- Deployed (type: DOE) in FY 1998 at Oak Ridge (Bethel Valley Evaporator Service Tank) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (BVEST Tank C-1) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1998 at Oak Ridge (BVEST W-22) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1998 at Oak Ridge (BVEST W-23) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1999 at Savannah River Site (SRS F Tank Pump 1) in Aiken, SC

# AEA Fluidic Pulse Jet Mixer

(OST/TMS ID: 1511/ TMS Application ID: 1788)

AEA's Fluidic Pulse Jet Mixer was developed to mix and maintain the suspension of solids and to blend process liquids. The mixer can be used to combine a tank's available supernate with the sludge into a slurry that is suitable for pumping. The system uses jet nozzles in the tank coupled to a charge vessel. Then, a jet pump creates a partial vacuum in the charge vessel allowing it to be filled with waste. Next, air pressure is applied to the charge vessel, forcing sludge back into the tank and mixing it with the liquid waste. When the liquid waste contains 10% solids, a batch is pumped out of the tank.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Savannah River Site, SRS F Tank Pump 1 (Aiken, SC, United States)

**PBS Name**: Waste Removal Operations and Tank Closure [SR-HL03, 0038]

**Date of Deployment**: June 1999

**Technology User**: Westinghouse Savannah River Company

**Deployment Value/Impact**: AEA's Fluidic Pulse Jet Mixer was used (at SRS F Tank Pump 1) to mix and maintain the suspension of solids, to blend process liquids, and combine the tank's available supernate with the sludge into a slurry that is suitable for pumping/retrieval.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Thomas S. Gutmann (DOE-SR) - Aiken, SC. Tel. 803-208-7408

**OST Program POC(s)**:
Ted P. Pietrok (DOE-RL) - Richland, WA. Tel. 509-372-4546

**Technology User POC(s)**:
Jerry Morin (Westinghouse Savannah River Corporation) - Aiken, SC. Tel. 803-725-7669

**Vendor Company POC(s)**:
Laurie Judd (AEA Technologies Consultancy Services, Inc.) - Vienna, VA. Tel. 703-433-0720

**Major Developers**:
- AEA Technology Inc.
- Oak Ridge National Laboratory, Robotics & Process Systems Division
- Pacific Northwest National Laboratory, Energy Technology Division

**Vendor Company**:
AEA Technologies (http://www.aeat.co.uk/)

**Other Deployments**:
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (BVEST Tank C-1) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1999 at Oak Ridge Reservation (Y-12, ORR, K-25, ORNL) (BVEST Tank C-2) in Oak Ridge, TN
- Deployed (type: DOE) in FY 1998 at Oak Ridge (Bethel Valley Evaporator Service Tank) in Oak Ridge, TN

# Hydrous Pyrolysis/Oxidation

(OST/TMS ID: 1519/ TMS Application ID: 1736)

Chlorinated solvents are the most prevalent contaminants in the environments beneath DOE sites. Hydrous pyrolysis works on the principle that these chemicals readily oxidize to carbon dioxide and chlorine when heated to temperatures at the boiling point of water and in the presence of oxidants (oxygenated water or soil minerals). Steam and oxygen are injected, building a heated, oxygenated zone in the subsurface. When injection is halted, the steam condenses and contaminated ground water returns to the heated zone; there it mixes with the condensate and oxygen, which destroys most dissolved contaminants.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Visalia, Power Pole Treatment Yard (Visalia, CA, United States)

**PBS Name**: Not Specified

**Date of Deployment**: November 1998 **Technology User**: Bechtel Engineering

**Deployment Value/Impact**: Quantitative results estimate that 16% of preservatives have been destroyed thus far. This process is ongoing.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Terry Scierrotta (Southern California Edison) - Visalia, CA. Tel. 626-302-9723

**OST Program POC(s)**:
Elizabeth Phillips (DOE-OR) - Oak Ridge, TN. Tel. 423-241-6172

**Technology User POC(s)**:
Craig Eaker (S. Ca. Edison Env. Affairs Div.) - Visalia, CA. Tel. 626-302-8531

**Vendor Company POC(s)**:
Hank Sowers (SteamTech Environmental Services, Inc.) - Bakersfield, CA. Tel. 661-322-6478

**Major Developers**:
- Integrated Water Technology Inc.
- Lawrence Livermore National Laboratory, Environmental Restoration Division
- SteamTech

**Vendor Company**:
Steam Tech

**Other Deployments**:
- Deployed (type: Non-DOE) in FY 1997 at Visalia Commercial Creosote Site (Edison Power Pole Treatment Yard) in Visalia, CA

# Nondestructive Waste Assay Using Combined Thermal Epithermal Neutron Interrogation

(OST/TMS ID: 1568/ TMS Application ID: 1104)

The CTEN method is an improved differential die-away technique (DDT) passive active neutron (PAN) method, that interrogates the waste drum with both thermal and epithermal neutrons. DDT/PAN techniques depend upon significant measurement corrections to compensate for the effects of the matrix material in which the TRU waste is located. The CTEN was designed to improve on existing PAN capabilities to better correct for the matrix and source effects on the measurement. The enhanced capabilities designed into the CTEN system include: (1) active and epithermal neutron interrogation for detection of self-shielding fissile material; (2) new type of neutron multiplicity module for both active and passive measurements; (3) detectors and methods to determine the distribution of fissile material in a waste drum; (4) Pulse-Arrival-Time Recording modules; (5) flux monitors to detect matrix inhomogeneities; and (6) methods to use the additional matrix information to improve assay accuracy.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Los Alamos National Laboratory, Stored Waste Drums at LANL (Los Alamos, NM, United States)

**PBS Name**: LANL Waste Management - Newly Generated Waste [AL012, 0471] LANL Waste Management - Legacy Waste [AL013, 0472]

**Date of Deployment**: April 1999

**Technology User**: Radioassay and Nondestructive Testing Facility, LANL

**Deployment Value/Impact**: The CTEN deployment at LANL results in cost savings due to the ability to reduce the number of drums shipped to WIPP by certifying some drums as being low-level waste rather than TRU waste, and maximizing the number of drums in each TRUPACT II shipment to WIPP by reducing the assay error associated with precision and bias.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Pam Saxman (DOE-AL) - Albuquerque, NM. Tel. 505-845-6101

**OST Program POC(s)**:
Robert Estep (LANL - Principal Investigator) - Los Alamos, NM. Tel. 505-667-3683
Bill Owca (Department of Energy - Idaho) - Idaho Falls, ID. Tel. 208-526-1983
Whitney St. Michel (INEEL-MWFA) - Idaho Falls, ID. Tel. 208-526-3206

**Technology User POC(s)**:
No Points of Contact are listed.

**Vendor Company POC(s)**:
No Points of Contact are listed.

**Major Developers**:
Los Alamos National Laboratory

**Vendor Company**:
Transfer initiated to Canberra Industries

**Other Deployments**:
This is the first deployment of this technology.

# Penetration Enhancement for the Cone Penetrometer Using Sonic Drilling Technology

(OST/TMS ID: 1686/ TMS Application ID: 1584)

The sonic enhancement to the Cone Penetrometer Technology (CPT) greatly enhances the penetration capability in unconsolidated soils allowing CPT to be used in more difficult soils for site characterization and monitor emplacement. CPT coupled with a sonic drive allows advancement of CPT probes through layers in which CPTs have previously encountered refusal (e.g., 120 ft depth at SRS M-basin, gravel layers at Hanford). Combining vibratory and hydraulic push methods, the integrated sonic CPT system will have static and dynamic push capacities of 30,000 lb. at 35-150 Hz. The enhanced penetration capability allows existing CPT trucks to be as effective as heavy weight trucks.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Paducah Gaseous Diffusion Plant, Site C400 (Paducah, KY, United States)

**PBS Name**: Not Specified

**Date of Deployment**: June 1999

**Technology User**: Westinghouse Savannah River Company

**Deployment Value/Impact**: The Sonic CPT was successfully used to deploy the FLUTE Hydrophobic Membrane DNAPL sampler.

**Vendor Name for this Technology:** Sonic Cone Penetrometer

**Point of Contact**:

**User Program POC(s)**:
Sharon Robinson (DOE-SR) - Aiken, SC. Tel. 803-725-5793
John D. Sheppard (DOE/PAD) - Paducah, KY. Tel. 270-441-6804

**OST Program POC(s)**:
Joe Ginanni (DOE-NV) - N. Las Vegas, NV. Tel. 702-295-0209
Elizabeth Phillips (DOE-OR) - Oak Ridge, TN. Tel. 423-241-6172

**Technology User POC(s)**:
Carol A. Eddy-Dilek (Westinghouse Savannah River Company) - Aiken, SC. Tel. 513-529-3218

**Vendor Company POC(s)**:
No Points of Contact are listed.

**Major Developers**:
Applied Research Associates, Inc.

**Vendor Company**:
Vendor Not Applicable

**Other Deployments**:
This is the first deployment of this technology.

# DNAPL Bioremediation - RTDF

(OST/TMS ID: 1737/ TMS Application ID: 1421)

The Bioremediation Working Group of the Remediation Technologies Development Forum is a consortium including General Electric, Beak International, Ciba-Geigy, Dow, DuPont, ICI Americas, Novartis, Zeneca, DOE, the U.S. Air Force and the EPA. Each partner in the consortium brings expertise as well as resources to conduct studies on the effectiveness of bioremediation in degrading contaminants in soil. Reactive Transport in Three Dimensions (RT3D) software is based on the premise that bioremediation processes can be designed and controlled like other chemical processes and is now being using for natural attenuation evaluation at several government and industrial chlorinated ethane's contaminated sites. Users simply enter the site-specific information to simulate the contaminant plume in the ground water and can then evaluate various bioremediation options.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Netherlands National Geological Survey, NEPROMA PCW site (unknown, Netherlands)

**PBS Name**: Not Specified

**Date of Deployment**: January 1999

**Technology User**: Netherlands Institute of Applied Geosciences

**Deployment Value/Impact**: The RT3D code was used to analyze the feasibility of the monitored natural attenuation technology at this TCE site. The model results showed that the plume can be effectively managed by using this technology.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Rolf Hetterschijt (Netherlands National Geological Survey) - Neproma, Netherlands. Tel. 011-31-15-2696257

**OST Program POC(s)**:
Skip Chamberlain (EM-53) - Germantown, MD. Tel. 301-903-7248
Elizabeth Phillips (DOE-OR) - Oak Ridge, TN. Tel. 423-241-6172

**Technology User POC(s)**:
Netherlands Institute of Applied Geosciences (See Rolf Hetterschijt) - Neproma, Netherlands. Tel. 011-31-15-2696257

**Vendor Company POC(s)**:
No Points of Contact are listed.

**Major Developers**:
- Beak International
- Ciba-Geigy Corporation
- Dow Chemical Company
- DuPont
- Environmental Protection Agency
- General Electric
- ICI Americas
- Novartis
- Pacific Northwest National Laboratory
- U.S. Department of Energy
- United States Air Force
- William Power Corporation

**Vendor Company**:
Vendor Not Applicable

**Other Deployments**:
This is the first deployment for this technology.

# Micropurging of Wells

(OST/TMS ID: 1762/ TMS Application ID: 1675)

For water well monitoring purposes, it is essential that sampling have a minimum interference with natural aquifer conditions. Water within the screened section of a monitor well flows through the casing at its normal ground water flow velocity. Therefore, a sample collected from within the screened section represents the aquifer formation water. The baseline sampling approach involves purging three well volumes at a low rate (< 0.5 liters/minute) such that only limited draw-down occurs and, consequently, mixing of the stagnant water above the screened interval with the formation water may take place. The Low Volume Micropurging method involves only purging (at a rate of < 1 gpm) the volume of water contained within the discharge lines and pump prior to measurement of field chemical parameters and sample collection.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Idaho National Engineering and Environmental Laboratory, Test Area North (TAN) (Idaho Falls, ID, United States)

**PBS Name**: Test Area North Remediation [ID-ER-101, 0164]

**Date of Deployment**: January 1999

**Technology User**: No Technology User has been defined

**Deployment Value/Impact**: The micropurge sampling method generated 95% less waste water than the baseline purge and sample method. An analysis estimates that the capital costs for installing micropurge pumps for 29 wells at TAN will be recovered in 3 years. After that time, the net savings will be about $50K per year and $1.2M over the next 30 years. Cost savings are realized due to reduced labor and handling due to the reduced volume of purge water.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Patrick Trudel (DOE - Idaho) - Idaho Falls, ID. Tel. 208-526-0169

**OST Program POC(s)**:
Scott McMullin (DOE-SR) - Aiken, SC. Tel. 803-725-9596

**Technology User POC(s)**:
John Bukowski (INEEL) - Idaho Falls, ID. Tel. 208-526-8176

**Vendor Company POC(s)**:
No Points of Contact are listed.

**Major Developers**:
Lawrence Livermore National Laboratory, Environmental Restoration Division

**Vendor Company**:
Vendor Not Applicable

**Other Deployments**:
- Deployed (type: DOE) in FY 1997 at LLNL (Site 300) in Livermore, CA
- Deployed (type: DOE) in FY 1993 at FEMP (OU5) in ,

# Mobile Integrated Temporary Utility System

(OST/TMS ID: 1795/ TMS Application ID: 1629)

MITUS completely replaces site power for D&D projects in conjunction with other needed services. MITUS provides safe temporary power by routing power to various parts of the facility via international-orange-colored armored cables. These orange feeds terminate at up to 20 specially designed Kiosks. The Kiosks supply a variety of power voltages (110, 220, and 480 volts); 3-way communication capabilities and paging, emergency egress lighting; and a multi-level alarm system. The three alarm conditions are medical (blue), alert (yellow), and evacuation (red). Any alarm can be triggered from any Kiosk; every alarm signal also notifies the central alarm station. The modular design of MITUS allows for quick setup and teardown and movement to another facility.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Hanford Site, DR Reactor (Richland, WA, United States)

**PBS Name**: Decontamination and Decommissioning [RL-ER06, 0420]

**Date of Deployment**: October 1998 **Technology User**: Bechtel Hanford, Inc.

**Deployment Value/Impact**: The MITUS technology increased safety and productivity of the D&D activities by providing well-identified power at desired locations. It provided normal and emergency communication capabilities, emergency lighting, and central station cabinet controls and alarm awareness for each Kiosk. The MITUS technology allowed the complete de-energization of existing building power once the MITUS was on line for the reactor. This allowed D&D work to continue unhampered by constraints for local area deactivation and extended zero energy checks.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Shannon N. Saget (DOE-RL) - Richland, WA. Tel. 509-372-4029

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Technology User POC(s)**:
Kim Koegler (Bechtel Hanford Inc.) - Richland, WA. Tel. 509-372-9294

**Vendor Company POC(s)**:
Steve Cabibbo (Rumsey Electric) - Conshohocken, PA. Tel. 610-832-9116

**Major Developers**:
No Major Developers are listed.

**Vendor Company**:
Rumsey Electric

**Other Deployments**:

- Deployed (type: DOE) in FY 1997 at Hanford (105-C Reactor) in Richland, WA

# Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1779)

The Master-Lee InstaCote consists of a polyurethane film cover. Master-Lee coating applicator consists of a modified Gusmer Model H-2000 high pressure proportioner that controls the mixture of coating compounds and a Gusmer Model No. GX-7 spray gun for spraying the coating onto the surfaces.

The coatings are prepared by mixing two different compounds before the application. The proportion of the compounds are controlled at the high pressure proportioner and delivered to the spray gun via two different hoses.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Savannah River Site, CTS Pit Pad H Area (Aiken, SC, United States)

**PBS Name**: H-Area Stabilization Project [SR-NM02, 0488] Pollution Prevention [SR-SW07, 0050]

**Date of Deployment**: December 1998

**Technology User**: WSRC; Facility Decommissioning Division

**Deployment Value/Impact**: InstaCote was applied to rollback the area from a Contamination Area to a Radiological Area, thereby eliminating the daily generation of protective clothing and waste for routine entries. InstaCote was chosen for its long term durability and its ability to reduce PPE requirements, thus reducing waste and cost.

**Vendor Name for this Technology:** Master-Lee InstaCote

**Point of Contact**:

**User Program POC(s)**:
Martin Salazar (DOE Savannah River) - Aiken, SC. Tel. 803-557-3617

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Technology User POC(s)**:
Heatherly Dukes (Westinghouse Savannah River Company) - Aiken, SC. Tel. 803-725-3771

**Vendor Company POC(s)**:
Don Koozer (Master-Lee) - Richland, WA. Tel. 509-783-3523

**Major Developers**:
Master-Lee

**Vendor Company**:
Master-Lee

**Other Deployments**:

- Deployed (type: DOE) in FY 1998 at Savannah River Site (Railcar at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Rocky Flats Environmental Technology Site (Building 371, Room 3559) in Golden, CO
- Deployed (type: DOE) in FY 1998 at Savannah River Site (H Area Tank 15) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 17 and 20) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-R Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 25-28 and 44-47) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-P Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (E Area Vaults) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (ITP Tank 40) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (DI Pad stabilization at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area West Pump House) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (211 H) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-L Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Trailer Space Rollback at 105-C Decon Facility, Trailer Space Rollback) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Old Sand Filter Trench, F Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Transfer Bay Dock at 105-C Decon Facility) in Aiken, SC

## Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1779)

- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 42) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Tank 15 H Area [2nd phase]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 C Decon Facility [encapsulation of lead from 232F Facility]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 51) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (235-F Vault) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 L Transfer Bay) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (F Area Caustic Tank Basin) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Old HB Line) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (678-T Pad) in Aiken, SC

# Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1780)

The Master-Lee InstaCote consists of a polyurethane film cover. Master-Lee coating applicator consists of a modified Gusmer Model H-2000 high pressure proportioner that controls the mixture of coating compounds and a Gusmer Model No. GX-7 spray gun for spraying the coating onto the surfaces.

The coatings are prepared by mixing two different compounds before the application. The proportion of the compounds are controlled at the high pressure proportioner and delivered to the spray gun via two different hoses.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Savannah River Site, ITP Tank 42 (Aiken, SC, United States)

**PBS Name**: Pollution Prevention [SR-SW07, 0050]

**Date of Deployment**: December 1998

**Technology User**: WSRC; Facility Decommissioning Division

**Deployment Value/Impact**: InstaCote was used to coat 1,500 sq. ft. of ITP Tank 42. This effort rolled the tank top back from a contamination area to a Radiological Buffer area. The benefits from this was a cost savings by eliminating the generation of waste and personal protective clothing that would have been generated daily for routine entries on the tank top.

**Vendor Name for this Technology:** Master-Lee InstaCote

**Point of Contact**:

**User Program POC(s)**:
Martin Salazar (DOE Savannah River) - Aiken, SC. Tel. 803-557-3617

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Technology User POC(s)**:
Heatherly Dukes (Westinghouse Savannah River Company) - Aiken, SC. Tel. 803-725-3771

**Vendor Company POC(s)**:
Don Koozer (Master-Lee) - Richland, WA. Tel. 509-783-3523

**Major Developers**:
Master-Lee

**Vendor Company**:
Master-Lee

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Savannah River Site (CTS Pit Pad H Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Railcar at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Rocky Flats Environmental Technology Site (Building 371, Room 3559) in Golden, CO
- Deployed (type: DOE) in FY 1998 at Savannah River Site (H Area Tank 15) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 17 and 20) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-R Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 25-28 and 44-47) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-P Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (E Area Vaults) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (ITP Tank 40) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (DI Pad stabilization at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area West Pump House) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (211 H) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-L Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Trailer Space Rollback at 105-C Decon Facility, Trailer Space Rollback) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Old Sand Filter Trench, F Area) in Aiken, SC

## Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1780)

- Deployed (type: DOE) in FY 1998 at Savannah River Site (Transfer Bay Dock at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Tank 15 H Area [2nd phase]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 C Decon Facility [encapsulation of lead from 232F Facility]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 51) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (235-F Vault) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 L Transfer Bay) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (F Area Caustic Tank Basin) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Old HB Line) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (678-T Pad) in Aiken, SC

# Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1781)

The Master-Lee InstaCote consists of a polyurethane film cover. Master-Lee coating applicator consists of a modified Gusmer Model H-2000 high pressure proportioner that controls the mixture of coating compounds and a Gusmer Model No. GX-7 spray gun for spraying the coating onto the surfaces.

The coatings are prepared by mixing two different compounds before the application. The proportion of the compounds are controlled at the high pressure proportioner and delivered to the spray gun via two different hoses.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Savannah River Site, Tank 15 H Area (2nd phase) (Aiken, SC, United States)

**PBS Name**: H-Tank Farm [SR-HL01, 0036] H-Area Stabilization Project [SR-NM02, 0488] Pollution Prevention [SR-SW07, 0050]

**Date of Deployment**: February 1999

**Technology User**: WSRC; Facility Decommissioning Division

**Deployment Value/Impact**: InstaCote was used to coat and stabilize 6,362 sq. ft. within Tank 15 H Area. The area was rolled back from a high contamination area and Airborne Radiological area to a Contamination Area to eliminate/reduce the amount of personal protective clothing and respiratory protection needed to enter the area. The InstaCote also provided waste reduction benefits.

**Vendor Name for this Technology:** Master-Lee InstaCote

**Point of Contact**:

**User Program POC(s)**:
Martin Salazar (DOE Savannah River) - Aiken, SC. Tel. 803-557-3617

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Technology User POC(s)**:
Heatherly Dukes (Westinghouse Savannah River Company) - Aiken, SC. Tel. 803-725-3771

**Vendor Company POC(s)**:
Don Koozer (Master-Lee) - Richland, WA. Tel. 509-783-3523

**Major Developers**:
Master-Lee

**Vendor Company**:
Master-Lee

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Savannah River Site (CTS Pit Pad H Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Railcar at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Rocky Flats Environmental Technology Site (Building 371, Room 3559) in Golden, CO
- Deployed (type: DOE) in FY 1998 at Savannah River Site (H Area Tank 15) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 17 and 20) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-R Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 25-28 and 44-47) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-P Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (E Area Vaults) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (ITP Tank 40) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (DI Pad stabilization at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area West Pump House) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (211 H) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-L Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Trailer Space Rollback at 105-C Decon Facility, Trailer Space Rollback) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Old Sand Filter Trench, F Area) in Aiken,

SC

- Deployed (type: DOE) in FY 1998 at Savannah River Site (Transfer Bay Dock at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 42) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 C Decon Facility [encapsulation of lead from 232F Facility]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 51) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (235-F Vault) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 L Transfer Bay) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (F Area Caustic Tank Basin) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Old HB Line) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (678-T Pad) in Aiken, SC

# Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1782)

The Master-Lee InstaCote consists of a polyurethane film cover. Master-Lee coating applicator consists of a modified Gusmer Model H-2000 high pressure proportioner that controls the mixture of coating compounds and a Gusmer Model No. GX-7 spray gun for spraying the coating onto the surfaces.

The coatings are prepared by mixing two different compounds before the application. The proportion of the compounds are controlled at the high pressure proportioner and delivered to the spray gun via two different hoses.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Savannah River Site, 105 C Decon Facility [encapsulation of lead from 232F Facility) (Aiken, SC, United States)

**PBS Name**: Pollution Prevention [SR-SW07, 0050]

**Date of Deployment**: February 1999

**Technology User**: WSRC; Facility Decommissioning Division

**Deployment Value/Impact**: InstaCote was used to stabilize contaminated lead from the 232-F Facility. Lead sheet and lead brick was encapsulated eliminating the hazard of handling the lead. Application of the Master-Lee InstaCote provided cost savings by eliminating the requirement for personnel to attend Lead Training and the requirement for medical examination to perform blood baselining.

**Vendor Name for this Technology:** Master-Lee InstaCote

**Point of Contact**:

**User Program POC(s)**:
Martin Salazar (DOE Savannah River) - Aiken, SC. Tel. 803-557-3617

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Technology User POC(s)**:
Heatherly Dukes (Westinghouse Savannah River Company) - Aiken, SC. Tel. 803-725-3771

**Vendor Company POC(s)**:
Don Koozer (Master-Lee) - Richland, WA. Tel. 509-783-3523

**Major Developers**:
Master-Lee

**Vendor Company**:
Master-Lee

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Savannah River Site (CTS Pit Pad H Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Railcar at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Rocky Flats Environmental Technology Site (Building 371, Room 3559) in Golden, CO
- Deployed (type: DOE) in FY 1998 at Savannah River Site (H Area Tank 15) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 17 and 20) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-R Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 25-28 and 44-47) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-P Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (E Area Vaults) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (ITP Tank 40) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (DI Pad stabilization at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area West Pump House) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (211 H) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-L Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Trailer Space Rollback at 105-C Decon Facility, Trailer Space Rollback) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Old Sand Filter Trench, F Area) in Aiken,

SC

- Deployed (type: DOE) in FY 1998 at Savannah River Site (Transfer Bay Dock at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 42) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Tank 15 H Area [2nd phase]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 51) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (235-F Vault) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 L Transfer Bay) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (F Area Caustic Tank Basin) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Old HB Line) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (678-T Pad) in Aiken, SC

# Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1783)

The Master-Lee InstaCote consists of a polyurethane film cover. Master-Lee coating applicator consists of a modified Gusmer Model H-2000 high pressure proportioner that controls the mixture of coating compounds and a Gusmer Model No. GX-7 spray gun for spraying the coating onto the surfaces.

The coatings are prepared by mixing two different compounds before the application. The proportion of the compounds are controlled at the high pressure proportioner and delivered to the spray gun via two different hoses.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Savannah River Site, ITP Tank 51 (Aiken, SC, United States)

**PBS Name**: Pollution Prevention [SR-SW07, 0050]

**Date of Deployment**: April 1999

**Technology User**: WSRC; Facility Decommissioning Division

**Deployment Value/Impact**: InstaCote was used to coat 3,700 sq. ft. of ITP Tank 51. This effort rolled the tank top back from a contamination area to a Radiological Buffer area. The benefits were cost savings through the elimination of generated waste and personal protective clothing that would have been worn daily for routine entries on the tank top.

**Vendor Name for this Technology:** Master-Lee InstaCote

**Point of Contact**:

**User Program POC(s)**:
Martin Salazar (DOE Savannah River) - Aiken, SC. Tel. 803-557-3617

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Technology User POC(s)**:
Heatherly Dukes (Westinghouse Savannah River Company) – Aiken, SC. Tel. 803-725-3771

**Vendor Company POC(s)**:
Don Koozer (Master-Lee) - Richland, WA. Tel. 509-783-3523

**Major Developers**:
Master-Lee

**Vendor Company**:
Master-Lee

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Savannah River Site (CTS Pit Pad H Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Railcar at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Rocky Flats Environmental Technology Site (Building 371, Room 3559) in Golden, CO
- Deployed (type: DOE) in FY 1998 at Savannah River Site (H Area Tank 15) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 17 and 20) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-R Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 25-28 and 44-47) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-P Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (E Area Vaults) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (ITP Tank 40) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (DI Pad stabilization at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area West Pump House) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (211 H) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-L Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Trailer Space Rollback at 105-C Decon Facility, Trailer Space Rollback) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Old Sand Filter Trench, F Area) in Aiken, SC

## Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1783)

- Deployed (type: DOE) in FY 1998 at Savannah River Site (Transfer Bay Dock at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 42) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Tank 15 H Area [2nd phase]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 C Decon Facility [encapsulation of lead from 232F Facility]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (235-F Vault) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 L Transfer Bay) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (F Area Caustic Tank Basin) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Old HB Line) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (678-T Pad) in Aiken, SC

# Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1784)

The Master-Lee InstaCote consists of a polyurethane film cover. Master-Lee coating applicator consists of a modified Gusmer Model H-2000 high pressure proportioner that controls the mixture of coating compounds and a Gusmer Model No. GX-7 spray gun for spraying the coating onto the surfaces.

The coatings are prepared by mixing two different compounds before the application. The proportion of the compounds are controlled at the high pressure proportioner and delivered to the spray gun via two different hoses.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Savannah River Site, 105 L Transfer Bay (Aiken, SC, United States)

**PBS Name**: Pollution Prevention [SR-SW07, 0050]

**Date of Deployment**: October 1998

**Technology User**: WSRC; Facility Decommissioning Division

**Deployment Value/Impact**: InstaCote was applied to 3,300 sq. ft. within the 105L Transfer Bay as a permanent coating in a Fixed Contamination area to eliminate the cost of having to constantly repaint the area.

**Vendor Name for this Technology:** Master-Lee InstaCote

**Point of Contact**:

**User Program POC(s)**:
Martin Salazar (DOE Savannah River) - Aiken, SC. Tel. 803-557-3617

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Technology User POC(s)**:
Heatherly Dukes (Westinghouse Savannah River Company) - Aiken, SC. Tel. 803-725-3771

**Vendor Company POC(s)**:
Don Koozer (Master-Lee) - Richland, WA. Tel. 509-783-3523

**Major Developers**:
Master-Lee

**Vendor Company**:
Master-Lee

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Savannah River Site (CTS Pit Pad H Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Railcar at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Rocky Flats Environmental Technology Site (Building 371, Room 3559) in Golden, CO
- Deployed (type: DOE) in FY 1998 at Savannah River Site (H Area Tank 15) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 17 and 20) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-R Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 25-28 and 44-47) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-P Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (E Area Vaults) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (ITP Tank 40) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (DI Pad stabilization at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area West Pump House) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (211 H) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-L Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Trailer Space Rollback at 105-C Decon Facility, Trailer Space Rollback) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Old Sand Filter Trench, F Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Transfer Bay Dock at 105-C Decon Facility) in Aiken, SC

## Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1784)

- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 42) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Tank 15 H Area [2nd phase]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 C Decon Facility [encapsulation of lead from 232F Facility]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 51) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (235-F Vault) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (F Area Caustic Tank Basin) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Old HB Line) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (678-T Pad) in Aiken, SC

# Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1785)

The Master-Lee InstaCote consists of a polyurethane film cover. Master-Lee coating applicator consists of a modified Gusmer Model H-2000 high pressure proportioner that controls the mixture of coating compounds and a Gusmer Model No. GX-7 spray gun for spraying the coating onto the surfaces.

The coatings are prepared by mixing two different compounds before the application. The proportion of the compounds are controlled at the high pressure proportioner and delivered to the spray gun via two different hoses.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Savannah River Site, F Area Caustic Tank Basin (Aiken, SC, United States)

**PBS Name**: F-Area Stabilization Project [SR-NM01, 0487] Pollution Prevention [SR-SW07, 0050]

**Date of Deployment**: October 1998

**Technology User**: WSRC; Facility Decommissioning Division

**Deployment Value/Impact**: Master-Lee InstaCote was applied to rollback an area from a High Contamination area to a contamination area. InstaCote helped reduce the daily generation of waste and reduced the necessity of wearing PPEs thus helping to decrease cost.

**Vendor Name for this Technology:** Master-Lee InstaCote

**Point of Contact**:

**User Program POC(s)**:
Martin Salazar (DOE Savannah River) - Aiken, SC. Tel. 803-557-3617

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Technology User POC(s)**:
Heatherly Dukes (Westinghouse Savannah River Company) - Aiken, SC. Tel. 803-725-3771

**Vendor Company POC(s)**:
Don Koozer (Master-Lee) - Richland, WA. Tel. 509-783-3523

**Major Developers**:
Master-Lee

**Vendor Company**:
Master-Lee

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Savannah River Site (CTS Pit Pad H Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Railcar at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Rocky Flats Environmental Technology Site (Building 371, Room 3559) in Golden, CO
- Deployed (type: DOE) in FY 1998 at Savannah River Site (H Area Tank 15) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 17 and 20) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-R Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 25-28 and 44-47) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-P Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (E Area Vaults) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (ITP Tank 40) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (DI Pad stabilization at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area West Pump House) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (211 H) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-L Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Trailer Space Rollback at 105-C Decon Facility, Trailer Space Rollback) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Old Sand Filter Trench, F Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Transfer Bay Dock at 105-C Decon Facility) in Aiken, SC

## Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1785)

- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 42) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Tank 15 H Area [2nd phase]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 C Decon Facility [encapsulation of lead from 232F Facility]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 51) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (235-F Vault) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 L Transfer Bay) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Old HB Line) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (678-T Pad) in Aiken, SC

# Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1786)

The Master-Lee InstaCote consists of a polyurethane film cover. Master-Lee coating applicator consists of a modified Gusmer Model H-2000 high pressure proportioner that controls the mixture of coating compounds and a Gusmer Model No. GX-7 spray gun for spraying the coating onto the surfaces.

The coatings are prepared by mixing two different compounds before the application. The proportion of the compounds are controlled at the high pressure proportioner and delivered to the spray gun via two different hoses.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Savannah River Site, Old HB Line (Aiken, SC, United States)

**PBS Name**: Old HB Line Deactivation Project [SR-FA07, 0504] Pollution Prevention [SR-SW07, 0050]

**Date of Deployment**: November 1998

**Technology User**: WSRC; Facility Decommissioning Division

**Deployment Value/Impact**: InstaCote was applied to the 800 sq. ft. of floor in a room of the Old HB Line Controlled Area to seal floor expansion joints to prevent contamination from leaking through and spreading. InstaCote was chosen for its long term durability, and has reduced the necessity of wearing PPEs near this facility, thus reducing costs.

**Vendor Name for this Technology:** Master-Lee InstaCote

**Point of Contact**:

**User Program POC(s)**:
Martin Salazar (DOE Savannah River) - Aiken, SC. Tel. 803-557-3617

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Technology User POC(s)**:
Heatherly Dukes (Westinghouse Savannah River Company) - Aiken, SC. Tel. 803-725-3771

**Vendor Company POC(s)**:
Don Koozer (Master-Lee) - Richland, WA. Tel. 509-783-3523

**Major Developers**:
Master-Lee

**Vendor Company**:
Master-Lee

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Savannah River Site (CTS Pit Pad H Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Railcar at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Rocky Flats Environmental Technology Site (Building 371, Room 3559) in Golden, CO
- Deployed (type: DOE) in FY 1998 at Savannah River Site (H Area Tank 15) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 17 and 20) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-R Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 25-28 and 44-47) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-P Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (E Area Vaults) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (ITP Tank 40) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (DI Pad stabilization at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area West Pump House) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (211 H) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-L Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Trailer Space Rollback at 105-C Decon Facility, Trailer Space Rollback) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Old Sand Filter Trench, F Area) in Aiken,

SC

- Deployed (type: DOE) in FY 1998 at Savannah River Site (Transfer Bay Dock at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 42) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Tank 15 H Area [2nd phase]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 C Decon Facility [encapsulation of lead from 232F Facility]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 51) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (235-F Vault) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 L Transfer Bay) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (F Area Caustic Tank Basin) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (678-T Pad) in Aiken, SC

# Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1839)

The Master-Lee InstaCote consists of a polyurethane film cover. Master-Lee coating applicator consists of a modified Gusmer Model H-2000 high pressure proportioner that controls the mixture of coating compounds and a Gusmer Model No. GX-7 spray gun for spraying the coating onto the surfaces.

The coatings are prepared by mixing two different compounds before the application. The proportion of the compounds are controlled at the high pressure proportioner and delivered to the spray gun via two different hoses.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Savannah River Site, 235-F Vault (Aiken, SC, United States)

**PBS Name**: 235-F Deactivation Project [SR-FA06, 0503] Pollution Prevention [SR-SW07, 0050]

**Date of Deployment**: February 1999 **Technology User**: Savannah River Site

**Deployment Value/Impact**: InstaCote was used to provide a more permanent coating to approximately 3,500 sq. ft. of floor space within a room in the 235 F vault. Normally, the floor was painted every 2-3 years. InstaCote is expected to last up to 10-15 years due to its durability, thereby providing increased cost savings.

**Vendor Name for this Technology:** Master-Lee InstaCote

**Point of Contact**:

**User Program POC(s)**:
Martin Salazar (DOE Savannah River) - Aiken, SC. Tel. 803-557-3617

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Technology User POC(s)**:
Heatherly Dukes (Westinghouse Savannah River Company) - Aiken, SC. Tel. 803-725-3771

**Vendor Company POC(s)**:
Don Koozer (Master-Lee) - Richland, WA. Tel. 509-783-3523

**Major Developers**:
Master-Lee

**Vendor Company**:
Master-Lee

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Savannah River Site (CTS Pit Pad H Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Railcar at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Rocky Flats Environmental Technology Site (Building 371, Room 3559) in Golden, CO
- Deployed (type: DOE) in FY 1998 at Savannah River Site (H Area Tank 15) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 17 and 20) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-R Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 25-28 and 44-47) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-P Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (E Area Vaults) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (ITP Tank 40) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (DI Pad stabilization at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area West Pump House) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (211 H) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-L Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Trailer Space Rollback at 105-C Decon Facility, Trailer Space Rollback) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Old Sand Filter Trench, F Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Transfer Bay Dock at 105-C Decon Facility) in Aiken, SC

## Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1839)

- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 42) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Tank 15 H Area [2nd phase]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 C Decon Facility [encapsulation of lead from 232F Facility]) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 51) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 L Transfer Bay) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (F Area Caustic Tank Basin) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Old HB Line) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (678-T Pad) in Aiken, SC

# Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1841)

The Master-Lee InstaCote consists of a polyurea film cover. Master-Lee coating applicator consists of a modified Gusmer Model H-2000 high pressure proportioner that controls the mixture of coating compounds and a Gusmer Model No. GX-7 spray gun for spraying the coating onto the surfaces. The coatings are prepared by mixing two different compounds before the application. The proportion of the compounds are controlled at the high pressure proportioner and delivered to the spray gun via two different hoses.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Savannah River Site, 678-T Pad (Aiken, SC, United States)

**PBS Name**: Pollution Prevention [SR-SW07, 0050]

**Date of Deployment**: August 1999

**Technology User**: WSRC; Facility Decommissioning Division

**Deployment Value/Impact**: InstaCote was used to rollback a Contaminated Area of approximately 2,850 sq. ft. to a clean area. This will allow people to walk around in the area without having to wear PPEs, thus helping to reduce costs.

**Vendor Name for this Technology:** Master-Lee InstaCote

**Point of Contact**:

**User Program POC(s)**:
Martin Salazar (DOE Savannah River) - Aiken, SC. Tel. 803-557-3617

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Technology User POC(s)**:
Heatherly Dukes (Westinghouse Savannah River Company) - Aiken, SC. Tel. 803-725-3771

**Vendor Company POC(s)**:
Don Koozer (Master-Lee) - Richland, WA. Tel. 509-783-3523

**Major Developers**:
Master-Lee

**Vendor Company**:
Master-Lee

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Savannah River Site (CTS Pit Pad H Area) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 42) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Tank 15 H Area (2nd phase)) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 C Decon Facility (encapsulation of lead from 232F Facility)) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (ITP Tank 51) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (105 L Transfer Bay) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (F Area Caustic Tank Basin) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (Old HB Line) in Aiken, SC
- Deployed (type: DOE) in FY 1999 at Savannah River Site (235-F Vault) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Rocky Flats Environmental Technology Site (Building 371, Room 3559) in Golden, CO
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Railcar at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (H Area Tank 15) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 17 and 20) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-R Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area Tanks 25-28 and 44-47) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-P Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (E Area Vaults) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (ITP Tank 40) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (DI Pad stabilization at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (F Area West Pump House) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (211 H) in Aiken, SC

## Reactor Surface Contamination Stabilization

(OST/TMS ID: 1839/ TMS Application ID: 1841)

- Deployed (type: DOE) in FY 1998 at Savannah River Site (105-L Reactor Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Trailer Space Rollback at 105-C Decon Facility, Trailer Space Rollback) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Old Sand Filter Trench, F Area) in Aiken, SC
- Deployed (type: DOE) in FY 1998 at Savannah River Site (Transfer Bay Dock at 105-C Decon Facility) in Aiken, SC
- Deployed (type: DOE) in FY 1997 at Savannah River Site (105-C Reactor Facility) in Aiken, SC

# Gamma Cam (TM) Radiation Imaging System

(OST/TMS ID: 1840/ TMS Application ID: 1549)

The GammaCamTM System displays the relative strength and location of gamma radiation as a two-dimensional image superimposed on the corresponding visual image. GammaCamTM consists of a portable sensor head that contains a gamma-ray imaging system and a TV camera. The superimposed radiation and visual images are displayed on a standard portable PC computer screen located several hundred feet from the radiation area. The PC controls the data acquisition time, the field of view, and the image display.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Idaho National Engineering and Environmental Laboratory, Test Area North Hot Shop (Idaho Falls, ID, United States)

**PBS Name**: Decontamination and Decommissioning [ID-ER-110, 0564]

**Date of Deployment**: March 1999 **Technology User**: INEEL

**Deployment Value/Impact**: The GammaCam was used to look at the equipment used to dry containers containing Three Mile Island materials at the Test Area North Hot Shop. In July, the area was again looked at using the GammaCam to see if processing the fuel caused any changes in radiation level. Remote operation of the GammaCam increased worker protection by locating radiation sources without exposing workers to unnecessary contamination.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID. Tel. 208-526-0645

**OST Program POC(s)**:
Harold D. Shoemaker (DOE-National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4715

**Technology User POC(s)**:
Ann Marie Smith (LMITCO) - Idaho Falls, ID. Tel. 208-526-6877

**Vendor Company POC(s)**:
Bill Patrie (AIL Systems) - Deer Park, NY. Tel. 800-944-1180

**Major Developers**:
AIL Systems, Inc.

**Vendor Company**:
AIL Systems, Inc. www.ail.com

**Other Deployments**:

- Deployed (type: DOE) in FY 1997 at Argonne National Lab (CP-5 Test Reactor) in Argonne, IL
- Deployed (type: DOE) in FY 1997 at Los Alamos National Laboratory in Los Alamos, NM
- Deployed (type: Non-DOE) in FY 1997 at Arkansas Nuclear One (Reactor Building) in Russellville, AR
- Deployed (type: DOE) in FY 1998 at Hanford (B-Plant) in Richland, WA
- Deployed (type: Non-DOE) in FY 1998 at Wolf Creek Nuclear Operating Corporation in Burlington, KS
- Deployed (type: DOE) in FY 1998 at INEEL (INTEC, New Waste Calcining Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1997 at INEEL (Advanced Test Reactor (ATR) Valve Cubicle 2B) in Idaho Falls, ID
- Deployed (type: Non-DOE) in FY 1999 at Newport News Shipyard (USS Nimitz) in Newport News, VA
- Deployed (type: DOE) in FY 1999 at Hanford Site (221-U Facility) in Richland, WA
- Deployed (type: DOE) in FY 1999 at Hanford Site (T-Plant) in Richland, WA

# Gamma Cam (TM) Radiation Imaging System

(OST/TMS ID: 1840/ TMS Application ID: 1634)

The GammaCamTM System displays the relative strength and location of gamma radiation as a two-dimensional image superimposed on the corresponding visual image. GammaCamTM consists of a portable sensor head that contains a gamma-ray imaging system and a TV camera. The superimposed radiation and visual images are displayed on a standard portable PC computer screen located several hundred feet from the radiation area. The PC controls the data acquisition time, the field of view, and the image display.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Hanford Site, 221-U Facility (Richland, WA, United States)

**PBS Name**: Facility Surveillance & Maintenance - ADS 3500 [RL-ER05, 0419]

**Date of Deployment**: May 1999

**Technology User**: Bechtel Hanford, Inc.

**Deployment Value/Impact**: The GammaCam system can be positioned outside the radiation area, thus reducing worker exposure and eliminating extensive shielding requirements. Worker exposure is also reduced through the use of the GammaCam by providing improved information for planning subsequent decontamination processes. Compared to baseline manual surveys, the GammaCam results in reduced labor costs, more reliable survey data, and significantly less radiation exposure.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Shannon N. Saget (DOE-RL) - Richland, WA. Tel. 509-372-4029

**Technology User POC(s)**:
Kim Koegler (Bechtel Hanford Inc.) - Richland, WA. Tel. 509-372-9294

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Vendor Company POC(s)**:
Al Henneborn (AIL Systems, Inc.) - Deer Park, NY. Tel. 516-595-5595
Bill Patrie (AIL Systems) - Deer Park, NY. Tel. 800-944-1180

**Major Developers**:
AIL Systems, Inc.

**Vendor Company**:
AIL Systems, Inc. www.ail.com

**Other Deployments**:

- Deployed (type: DOE) in FY 1997 at Argonne National Lab (CP-5 Test Reactor) in Argonne, IL
- Deployed (type: DOE) in FY 1997 at Los Alamos National Laboratory in Los Alamos, NM
- Deployed (type: Non-DOE) in FY 1997 at Arkansas Nuclear One (Reactor Building) in Russellville, AR
- Deployed (type: DOE) in FY 1998 at Hanford (B-Plant) in Richland, WA
- Deployed (type: Non-DOE) in FY 1998 at Wolf Creek Nuclear Operating Corporation in Burlington, KS
- Deployed (type: DOE) in FY 1998 at INEEL (INTEC, New Waste Calcining Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1997 at INEEL (Advanced Test Reactor (ATR) Valve Cubicle 2B) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Test Area North Hot Shop) in Idaho Falls, ID
- Deployed (type: Non-DOE) in FY 1999 at Newport News Shipyard (USS Nimitz) in Newport News, VA
- Deployed (type: DOE) in FY 1999 at Hanford Site (T-Plant) in Richland, WA

# Gamma Cam (TM) Radiation Imaging System

(OST/TMS ID: 1840/ TMS Application ID: 1805)

The GammaCamTM System displays the relative strength and location of gamma radiation as a two-dimensional image superimposed on the corresponding visual image. GammaCamTM consists of a portable sensor head that contains a gamma-ray imaging system and a TV camera. The superimposed radiation and visual images are displayed on a standard portable PC computer screen located several hundred feet from the radiation area. The PC controls the data acquisition time, the field of view, and the image display.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Hanford Site, T-Plant (Richland, WA, United States)

**PBS Name**: Facility Surveillance & Maintenance - ADS 3500 [RL-ER05, 0419]

**Date of Deployment**: August 1999

**Technology User**: Bechtel Hanford, Inc.

**Deployment Value/Impact**: The GammaCam was deployed in the Hanford T-Plant, a former plutonium reprocessing ´canyon,´ for determining radiation levels within the facility. Characterization data will be used for planning subsequent D&D activities once the Record of Decision on the Hanford canyons has been established. Compared to baseline manual survey methods, the GammaCam results in reduced labor costs, more reliable survey data, and significantly less radiation exposure to the workers.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Shannon N. Saget (DOE-RL) - Richland, WA. Tel. 509-372-4029

**Technology User POC(s)**:
Fen Simmons (B&W) - Richland, WA. Tel. 509-372-0413

**OST Program POC(s)**:
John Duda (DOE/NETL) - Morgantown, WV. Tel. 304-285-4217

**Vendor Company POC(s)**:
Al Henneborn (AIL Systems, Inc.) - Deer Park, NY. Tel. 516-595-5595
Bill Patrie (AIL Systems) - Deer Park, NY. Tel. 800-944-1180

**Major Developers**:
AIL Systems, Inc.

**Vendor Company**:
AIL Systems, Inc. www.ail.com

**Other Deployments**:

- Deployed (type: DOE) in FY 1997 at Argonne National Lab (CP-5 Test Reactor) in Argonne, IL
- Deployed (type: DOE) in FY 1997 at Los Alamos National Laboratory in Los Alamos, NM
- Deployed (type: Non-DOE) in FY 1997 at Arkansas Nuclear One (Reactor Building) in Russellville, AR
- Deployed (type: DOE) in FY 1998 at Hanford (B-Plant) in Richland, WA
- Deployed (type: Non-DOE) in FY 1998 at Wolf Creek Nuclear Operating Corporation in Burlington , KS
- Deployed (type: DOE) in FY 1998 at INEEL (INTEC, New Waste Calcining Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1997 at INEEL (Advanced Test Reactor (ATR) Valve Cubicle 2B) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Test Area North Hot Shop) in Idaho Falls, ID
- Deployed (type: Non-DOE) in FY 1999 at Newport News Shipyard (USS Nimitz) in Newport News, VA
- Deployed (type: DOE) in FY 1999 at Hanford Site (221-U Facility) in Richland, WA

# Gamma Cam (TM) Radiation Imaging System

(OST/TMS ID: 1840/ TMS Application ID: 1857)

The GammaCamTM System displays the relative strength and location of gamma radiation as a two-dimensional image superimposed on the corresponding visual image. GammaCamTM consists of a portable sensor head that contains a gamma-ray imaging system and a TV camera. The superimposed radiation and visual images are displayed on a standard portable PC computer screen located several hundred feet from the radiation area. The PC controls the data acquisition time, the field of view, and the image display.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Newport News Shipyard, USS Nimitz (Newport News, VA, United States)

**PBS Name**: Not Specified

**Date of Deployment**: June 1999

**Technology User**: INEEL/Bechtel BWXT Idaho, LLC

**Deployment Value/Impact**: During refueling of the USS Nimitz, one of the world´s largest nuclear-powered aircraft carriers, workers observed a radiation spike. Experts from the INEEL Remote Systems Application group were called in to determine if radioactivity was present, which could result in possible exposure to the workers and a continued work stoppage. The Navy suspected that interference caused by a welding machine may have caused the spike. The GammaCam, failing to locate a hot spot, supported this determination.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Mike Hartley (Bettis Atomic Power laboratory) - Newport News, VA. Tel. 757-688-4598

**OST Program POC(s)**:
Harold D. Shoemaker (DOE-National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4715

**Technology User POC(s)**:
Mike Berry (INEEL; Remote Systems Applications) - Idaho Falls, ID. Tel. 208-533-4443

**Vendor Company POC(s)**:
Richard Migiaccio (AIL Systems, Inc) - Deer Park, NY. Tel. 516-595-5595

**Major Developers**:
AIL Systems, Inc.

**Vendor Company**:
AIL Systems, Inc. (www.ail.com)

**Other Deployments**:

- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Test Area North Hot Shop) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Hanford Site (221-U Facility) in Richland, WA
- Deployed (type: DOE) in FY 1999 at Hanford Site (T-Plant) in Richland, WA
- Deployed (type: DOE) in FY 1998 at Hanford (B-Plant) in Richland, WA
- Deployed (type: Non-DOE) in FY 1998 at Wolf Creek Nuclear Operating Corporation (N/A) in Burlington , KS
- Deployed (type: DOE) in FY 1998 at INEEL (INTEC (New Waste Calcining Facility)) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1997 at Argonne National Lab (CP-5 Test Reactor) in Argonne, IL
- Deployed (type: DOE) in FY 1997 at Los Alamos National Laboratory (Unknown) in Los Alamos, NM
- Deployed (type: Non-DOE) in FY 1997 at Arkansas Nuclear One (Reactor Building) in Russellville, AR
- Deployed (type: DOE) in FY 1997 at INEEL (Advanced Test Reactor (ATR) Valve Cubicle 2B) in Idaho Falls, ID

# Oxy-Gasoline Torch

(OST/TMS ID: 1847/ TMS Application ID: 1553)

The Oxy-Gasoline Torch, developed by Petrogen International, is a safe, reliable cutting technique that uses a small pressure vessel which holds gasoline and air. The pressurized unit moves liquid gasoline through a .25-inch, two-braid hose to the mixer, a cone-shaped piece which fits into the torch head at the base of the tip. The mixer, which contains special grooves and wicks, receives both the pre-heat oxygen and the gasoline and combines them into the fuel mixture fed into the tip assembly. In the cutting tip, the gasoline changes from liquid to vapor increasing in volume by almost 200 times. The rapid expansion provides a strong force to the pre-heat flame. Since the gasoline is a confined liquid right into the cutting tip and liquid gasoline is stable, backflash cannot occur.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Idaho National Engineering and Environmental Laboratory, Sewage Treatment Plant (Idaho Falls, ID, United States)

**PBS Name**: Decontamination and Decommissioning [ID-ER-110, 0564]

**Date of Deployment**: November 1998 **Technology User**: INEEL

**Deployment Value/Impact**: The Oxy-Gasoline Torch was used to cut 1/2-in. to 1-in. thick rebar in concrete in order to place the concrete waste in waste boxes. It was also used to cut rebar that was sticking out of the concrete waste for recycle. The Oxy-Gasoline Torch cut approximately 2 to 4 times faster than the oxyacetylene torch, and was easier to use.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID. Tel. 208-526-0645

**OST Program POC(s)**:
Harold D. Shoemaker (DOE-National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4715

**Technology User POC(s)**:
Ann Marie Smith (LMITCO) - Idaho Falls, ID. Tel. 208-526-6877

**Vendor Company POC(s)**:
Milt Heft (Petrogen International) - San Leandro, CA. Tel. 510-569-7877

**Major Developers**:
Petrogen International, Inc.

**Vendor Company**:
Petrogen International, Inc. www.petrogen.com

**Other Deployments**:

- Deployed (type: DOE) in FY 1997 at Fernald (Plant 4) in Cincinnati, OH
- Deployed (type: DOE) in FY 1997 at Oak Ridge in TN
- Deployed (type: Non-DOE) in FY 1997 at Russia in Russia
- Deployed (type: DOE) in FY 1997 at Pantex Plant in Amarillo, TX
- Deployed (type: Non-DOE) in FY 1997 at Kazakhstan in Kazakhstan
- Deployed (type: Non-DOE) in FY 1998 at Envirocare in Salt Lake City, UT
- Deployed (type: Non-DOE) in FY 1997 at East River Drive; Brooklyn, NY in Brooklyn, NY
- Deployed (type: DOE) in FY 1998 at Hanford (C Reactor Gas & Water Tunnels) in Richland, WA
- Deployed (type: DOE) in FY 1998 at Ashtabula (RF-3 Burning Building) in Ashtabula, OH
- Deployed (type: DOE) in FY 1998 at INEEL (CFA-691) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at Fernald (Buildings 38A, 38B, and 24B) in Fernald, OH
- Deployed (type: DOE) in FY 1998 at Fernald (Plant 9) in Fernald, OH
- Deployed (type: DOE) in FY 1999 at Hanford Site (DR Reactor) in Richland, WA
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Security Training Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Initial Engine Test Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Auxiliary Reactor Area) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Hanford Site (F Reactor) in Richland, WA

# Oxy-Gasoline Torch

(OST/TMS ID: 1847/ TMS Application ID: 1555)

The Oxy-Gasoline Torch, developed by Petrogen International, is a safe, reliable cutting technique that uses a small pressure vessel which holds gasoline and air. The pressurized unit moves liquid gasoline through a .25-inch, two-braid hose to the mixer, a cone-shaped piece which fits into the torch head at the base of the tip. The mixer, which contains special grooves and wicks, receives both the pre-heat oxygen and the gasoline and combines them into the fuel mixture fed into the tip assembly. In the cutting tip, the gasoline changes from liquid to vapor increasing in volume by almost 200 times. The rapid expansion provides a strong force to the pre-heat flame. Since the gasoline is a confined liquid right into the cutting tip and liquid gasoline is stable, backflash cannot occur.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Idaho National Engineering and Environmental Laboratory, Security Training Facility (Idaho Falls, ID, United States)

**PBS Name**: Decontamination and Decommissioning [ID-ER-110, 0564]

**Date of Deployment**: January 1999 **Technology User**: INEEL

**Deployment Value/Impact**: The Oxy-Gasoline Torch was used at the Security Training Facility to cut up the cover plate for the reactor, piping, and help size reduce the cooling tower. The torch was approximately 2 to 4 times faster than the baseline torch and easier to use.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID. Tel. 208-526-0645

**OST Program POC(s)**:
Harold D. Shoemaker (DOE-National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4715

**Technology User POC(s)**:
Ann Marie Smith (LMITCO) - Idaho Falls, ID. Tel. 208-526-6877

**Vendor Company POC(s)**:
Milt Heft (Petrogen International) - San Leandro, CA. Tel. 510-569-7877

**Major Developers**:
Petrogen International, Inc.

**Vendor Company**:
Petrogen International Inc. www.petrogen.com

**Other Deployments**:

- Deployed (type: DOE) in FY 1997 at Fernald (Plant 4) in Cincinnati, OH
- Deployed (type: DOE) in FY 1997 at Oak Ridge in TN
- Deployed (type: Non-DOE) in FY 1997 at Russia in Russia
- Deployed (type: DOE) in FY 1997 at Pantex Plant in Amarillo, TX
- Deployed (type: Non-DOE) in FY 1997 at Kazakhstan in Kazakhstan
- Deployed (type: Non-DOE) in FY 1998 at Envirocare in Salt Lake City, UT
- Deployed (type: Non-DOE) in FY 1997 at East River Drive; Brooklyn, NY in Brooklyn, NY
- Deployed (type: DOE) in FY 1998 at Hanford (C Reactor Gas & Water Tunnels) in Richland, WA
- Deployed (type: DOE) in FY 1998 at Ashtabula (RF-3 Burning Building) in Ashtabula, OH
- Deployed (type: DOE) in FY 1998 at INEEL (CFA-691) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at Fernald (Buildings 38A, 38B, and 24B) in Fernald, OH
- Deployed (type: DOE) in FY 1998 at Fernald (Plant 9) in Fernald, OH
- Deployed (type: DOE) in FY 1999 at Hanford Site (DR Reactor) in Richland, WA
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Sewage Treatment Plant) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Initial Engine Test Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Auxiliary Reactor Area) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Hanford Site (F Reactor) in Richland, WA

# Oxy-Gasoline Torch

(OST/TMS ID: 1847/ TMS Application ID: 1556)

The Oxy-Gasoline Torch, developed by Petrogen International, is a safe, reliable cutting technique that uses a small pressure vessel which holds gasoline and air. The pressurized unit moves liquid gasoline through a .25-inch, two-braid hose to the mixer, a cone-shaped piece which fits into the torch head at the base of the tip. The mixer, which contains special grooves and wicks, receives both the pre-heat oxygen and the gasoline and combines them into the fuel mixture fed into the tip assembly. In the cutting tip, the gasoline changes from liquid to vapor increasing in volume by almost 200 times. The rapid expansion provides a strong force to the pre-heat flame. Since the gasoline is a confined liquid right into the cutting tip and liquid gasoline is stable, backflash cannot occur.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Idaho National Engineering and Environmental Laboratory, Initial Engine Test Facility (Idaho Falls, ID, United States)

**PBS Name**: Decontamination and Decommissioning [ID-ER-110, 0564]

**Date of Deployment**: April 1999 **Technology User**: INEEL

**Deployment Value/Impact**: The Oxy-Gasoline Torch was used to cut 1-in and 2-in thick metal plates and railroad track. The Oxy-Gasoline Torch worked approximately 2 to 4 times faster than the baseline torch and was easier to use.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID. Tel. 208-526-0645

**OST Program POC(s)**:
Harold D. Shoemaker (DOE-National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4715

**Technology User POC(s)**:
Ann Marie Smith (LMITCO) - Idaho Falls, ID. Tel. 208-526-6877

**Vendor Company POC(s)**:
Milt Heft (Petrogen International) - San Leandro, CA. Tel. 510-569-7877

**Major Developers**:
Petrogen International, Inc.

**Vendor Company**:
Petrogen International, Inc. www.petrogen.com

**Other Deployments**:

- Deployed (type: DOE) in FY 1997 at Fernald (Plant 4) in Cincinnati, OH
- Deployed (type: DOE) in FY 1997 at Oak Ridge in TN
- Deployed (type: Non-DOE) in FY 1997 at Russia in Russia
- Deployed (type: DOE) in FY 1997 at Pantex Plant in Amarillo, TX
- Deployed (type: Non-DOE) in FY 1997 at Kazakhstan in Kazakhstan
- Deployed (type: Non-DOE) in FY 1998 at Envirocare in Salt Lake City, UT
- Deployed (type: Non-DOE) in FY 1997 at East River Drive; Brooklyn, NY in Brooklyn, NY
- Deployed (type: DOE) in FY 1998 at Hanford (C Reactor Gas & Water Tunnels) in Richland, WA
- Deployed (type: DOE) in FY 1998 at Ashtabula (RF-3 Burning Building) in Ashtabula, OH
- Deployed (type: DOE) in FY 1998 at INEEL (CFA-691) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at Fernald (Buildings 38A, 38B, and 24B) in Fernald, OH
- Deployed (type: DOE) in FY 1998 at Fernald (Plant 9) in Fernald, OH
- Deployed (type: DOE) in FY 1999 at Hanford Site (DR Reactor) in Richland, WA
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Sewage Treatment Plant) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Security Training Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Auxiliary Reactor Area) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Hanford Site (F Reactor) in Richland, WA

# Oxy-Gasoline Torch

(OST/TMS ID: 1847/ TMS Application ID: 1559)

The Oxy-Gasoline Torch, developed by Petrogen International, is a safe, reliable cutting technique that uses a small pressure vessel which holds gasoline and air. The pressurized unit moves liquid gasoline through a .25-inch, two-braid hose to the mixer, a cone-shaped piece which fits into the torch head at the base of the tip. The mixer, which contains special grooves and wicks, receives both the pre-heat oxygen and the gasoline and combines them into the fuel mixture fed into the tip assembly. In the cutting tip, the gasoline changes from liquid to vapor increasing in volume by almost 200 times. The rapid expansion provides a strong force to the pre-heat flame. Since the gasoline is a confined liquid right into the cutting tip and liquid gasoline is stable, backflash cannot occur.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Idaho National Engineering and Environmental Laboratory, Auxiliary Reactor Area (Idaho Falls, ID, United States)

**PBS Name**: Decontamination and Decommissioning [ID-ER-110, 0564]

**Date of Deployment**: June 1999 **Technology User**: INEEL

**Deployment Value/Impact**: The Oxy-Gasoline Torch was used at the Auxiliary Reactor Area to size reduce large pieces of metal equipment. The Oxy-Gasoline Torch cut approximately 2 to 4 times faster than the baseline torch as well as being easier to use.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Chelsea D. Hubbard (DOE-ID) - Idaho Falls, ID. Tel. 208-526-0645

**OST Program POC(s)**:
Harold D. Shoemaker (DOE-National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4715

**Technology User POC(s)**:
Ann Marie Smith (LMITCO) - Idaho Falls, ID. Tel. 208-526-6877

**Vendor Company POC(s)**:
Milt Heft (Petrogen International) - San Leandro, CA. Tel. 510-569-7877

**Major Developers**:
Petrogen International, Inc.

**Vendor Company**:
Petrogen International, Inc. www.petrogen.com

**Other Deployments**:
- Deployed (type: DOE) in FY 1997 at Fernald (Plant 4) in Cincinnati, OH
- Deployed (type: DOE) in FY 1997 at Oak Ridge in TN
- Deployed (type: Non-DOE) in FY 1997 at Russia in Russia
- Deployed (type: DOE) in FY 1997 at Pantex Plant in Amarillo, TX
- Deployed (type: Non-DOE) in FY 1997 at Kazakhstan in Kazakhstan
- Deployed (type: Non-DOE) in FY 1998 at Envirocare in Salt Lake City, UT
- Deployed (type: Non-DOE) in FY 1997 at East River Drive; Brooklyn, NY in Brooklyn, NY
- Deployed (type: DOE) in FY 1998 at Hanford (C Reactor Gas & Water Tunnels) in Richland, WA
- Deployed (type: DOE) in FY 1998 at Ashtabula (RF-3 Burning Building) in Ashtabula, OH
- Deployed (type: DOE) in FY 1998 at INEEL (CFA-691) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at Fernald (Buildings 38A, 38B, and 24B) in Fernald, OH
- Deployed (type: DOE) in FY 1998 at Fernald (Plant 9) in Fernald, OH
- Deployed (type: DOE) in FY 1999 at Hanford Site (DR Reactor) in Richland, WA
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Sewage Treatment Plant) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Security Training Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Initial Engine Test Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Hanford Site (F Reactor) in Richland, WA

# Oxy-Gasoline Torch

(OST/TMS ID: 1847/ TMS Application ID: 1632)

The Oxy-Gasoline Torch, developed by Petrogen International, is a safe, reliable cutting technique that uses a small pressure vessel which holds gasoline and air. The pressurized unit moves liquid gasoline through a .25-inch, two-braid hose to the mixer, a cone-shaped piece which fits into the torch head at the base of the tip. The mixer, which contains special grooves and wicks, receives both the pre-heat oxygen and the gasoline and combines them into the fuel mixture fed into the tip assembly. In the cutting tip, the gasoline changes from liquid to vapor increasing in volume by almost 200 times. The rapid expansion provides a strong force to the pre-heat flame. Since the gasoline is a confined liquid right into the cutting tip and liquid gasoline is stable, backflash cannot occur.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Hanford Site, F Reactor (Richland, WA, United States)

**PBS Name**: Decontamination and Decommissioning [RL-ER06, 0420]

**Date of Deployment**: September 1999 **Technology User**: Bechtel Hanford, Inc.

**Deployment Value/Impact**: The Oxy-Gasoline Torch increased cutting speeds compared to baseline oxy-acetylene torches, particularly for metal thickness' greater than 2.5cm (1 inch). The Oxy-Gasoline Torch also reduced airborne contamination, used cheaper fuel, increased worker safety, and reduced cutting costs. An additional advantage of the Oxy-Gasoline Torch is that vaporization of the fuel in the tip is an endothermic process that reduced overheating of the torch and extended the life of the tip.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Shannon N. Saget (DOE-RL) - Richland, WA. Tel. 509-372-4029

**OST Program POC(s)**:
Steven J. Bossart (US Department of Energy, National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4643

**Technology User POC(s)**:
Kim Koegler (Bechtel Hanford Inc.) - Richland, WA. Tel. 509-372-9294

**Vendor Company POC(s)**:
Milt Heft (Petrogen International) - San Leandro, CA. Tel. 510-569-7877

**Major Developers**:
Petrogen International, Inc.

**Vendor Company**:
Petrogen International, Inc. www.petrogen.com

**Other Deployments**:

- Deployed (type: DOE) in FY 1997 at Fernald (Plant 4) in Cincinnati, OH
- Deployed (type: DOE) in FY 1997 at Oak Ridge in TN
- Deployed (type: Non-DOE) in FY 1997 at Russia in Russia
- Deployed (type: DOE) in FY 1997 at Pantex Plant in Amarillo, TX
- Deployed (type: Non-DOE) in FY 1997 at Kazakhstan in Kazakhstan
- Deployed (type: Non-DOE) in FY 1998 at Envirocare in Salt Lake City, UT
- Deployed (type: Non-DOE) in FY 1997 at East River Drive; Brooklyn, NY in Brooklyn, NY
- Deployed (type: DOE) in FY 1998 at Hanford (C Reactor Gas & Water Tunnels) in Richland, WA
- Deployed (type: DOE) in FY 1998 at Ashtabula (RF-3 Burning Building) in Ashtabula, OH
- Deployed (type: DOE) in FY 1998 at INEEL (CFA-691) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at Fernald (Buildings 38A, 38B, and 24B) in Fernald, OH
- Deployed (type: DOE) in FY 1998 at Fernald (Plant 9) in Fernald, OH
- Deployed (type: DOE) in FY 1999 at Hanford Site (DR Reactor) in Richland, WA
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Sewage Treatment Plant) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Security Training Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Initial Engine Test Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Auxiliary Reactor Area) in Idaho Falls, ID

# Oxy-Gasoline Torch

(OST/TMS ID: 1847/ TMS Application ID: 1837)

The Oxy-Gasoline Torch, developed by Petrogen International, is a safe, reliable cutting technique that uses a small pressure vessel which holds gasoline and air. The pressurized unit moves liquid gasoline through a .25-inch, two-braid hose to the mixer, a cone-shaped piece which fits into the torch head at the base of the tip. The mixer, which contains special grooves and wicks, receives both the pre-heat oxygen and the gasoline and combines them into the fuel mixture fed into the tip assembly. In the cutting tip, the gasoline changes from liquid to vapor increasing in volume by almost 200 times. The rapid expansion provides a strong force to the pre-heat flame. Since the gasoline is a confined liquid right into the cutting tip and liquid gasoline is stable, backflash cannot occur.

**DESCRIPTION OF THE DEPLOYMENT**

**Location**: Hanford Site, DR Reactor (Richland, WA, United States)

**PBS Name**: Decontamination and Decommissioning [RL-ER06, 0420]

**Date of Deployment**: September 1999 **Technology User**: Bechtel Hanford, Inc.

**Deployment Value/Impact**: The Oxy-Gasoline Torch increased cutting speeds compared to baseline oxy-acetylene torches, particularly for metal thickness' greater than 2.5cm (1 inch). The Oxy-Gasoline Torch also reduced airborne contamination, used cheaper fuel, increased worker safety, and reduced cutting costs. An additional advantage of the Oxy-Gasoline Torch is that vaporization of the fuel in the tip is an endothermic process that reduced overheating of the torch and extended the life of the tip.

**Vendor Name for this Technology:** Same as primary Technology Title

**Point of Contact**:

**User Program POC(s)**:
Dennis A. Brown (DOE-Richland) - Richland, WA.
Tel. 509-372-4030

**OST Program POC(s)**:
Steven J. Bossart (US Department of Energy, National Energy Technology Laboratory) - Morgantown, WV. Tel. 304-285-4643

**Technology User POC(s)**:
Kim Koegler (Bechtel Hanford Inc.) - Richland, WA.
Tel. 509-372-9294

**Vendor Company POC(s)**:
Milt Heft (Petrogen International) - San Leandro, CA.
Tel. 510-569-7877

**Major Developers**:
Petrogen International, Inc.

**Vendor Company**:
Petrogen International, Inc. www.petrogen.com

**Other Deployments**:

- Deployed (type: DOE) in FY 1997 at Fernald (Plant 4) in Cincinnati, OH
- Deployed (type: DOE) in FY 1997 at Oak Ridge in TN
- Deployed (type: Non-DOE) in FY 1997 at Russia in Russia
- Deployed (type: DOE) in FY 1997 at Pantex Plant in Amarillo, TX
- Deployed (type: Non-DOE) in FY 1997 at Kazakhstan in Kazakhstan
- Deployed (type: Non-DOE) in FY 1998 at Envirocare in Salt Lake City, UT
- Deployed (type: Non-DOE) in FY 1997 at East River Drive; Brooklyn, NY in Brooklyn, NY
- Deployed (type: DOE) in FY 1998 at Hanford (C Reactor Gas & Water Tunnels) in Richland, WA
- Deployed (type: DOE) in FY 1998 at Ashtabula (RF-3 Burning Building) in Ashtabula, OH
- Deployed (type: DOE) in FY 1998 at INEEL (CFA-691) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1998 at Fernald (Buildings 38A, 38B, and 24B) in Fernald, OH
- Deployed (type: DOE) in FY 1998 at Fernald (Plant 9) in Fernald, OH
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Sewage Treatment Plant) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Security Training Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Initial Engine Test Facility) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Idaho National Engineering and Environmental Laboratory (Auxiliary Reactor Area) in Idaho Falls, ID
- Deployed (type: DOE) in FY 1999 at Hanford Site (F Reactor) in Richland, WA